Claims

[c1] What is claimed is:

1.A track count method for an optical disc in an optical disc system, the optical disc system comprising an optical pickup moveable along a radial direction of the optical disc, a light source installed on the optical pickup for emitting light, and a plurality of sensors installed on the optical pickup for detecting light reflected from the optical disc, the method comprising:

using the light source to emit light towards the optical disc;

using the sensors to detect light reflected from the optical disc;

generating a tracking error (TE) signal based on the light received by the sensors while the optical pickup moves along a radial direction of the optical disc;

generating a tracking error zero crossing (TEZC) signal based on the TE signal;

generating a peak detecting (PD) signal based on the TE signal;

generating a pseudo radio frequency zero crossing (RFZC) signal based on the PD signal; and

generating a track count signal based on the TEZC signal and the pseudo RFZC signal.

[c2] 2.The method of claim 1 wherein the TEZC signal is inverted whenever the TE signal is zero.

[c3] 3.The method of claim 1 wherein the optical disc system further comprises an A/D (analog to digital) converter for converting the TE signal into a series of digital signals, a first comparator connected to the A/D converter which allows digital signals greater than a first threshold to pass through, a second comparator connected to the A/D converter which allows digital signals lower than a second threshold to pass through, a detector connected to the first and second comparators for detecting local maximums and local minimums of the TE signal according to the digital signals which pass through the first or second comparator, and a signal generator connected to the detector for generating the PD signal according to the local maximums and local minimums of the TE signal; the method further comprising:

using the A/D converter to convert the TE signal into the digital signals;

using the first comparator to compare the digital signals with the first threshold so as to allow digital signals greater than the first threshold to pass through;
using the second comparator to compare the digital signals with the second threshold so as to allow digital signals lower than the second threshold to pass through;
using the detector to detect local maximums and local minimums of the TE signal according to the digital signals which pass through the first or second comparator; and
using the signal generator to generate the PD signal according to the local maximums and local minimums of the TE signal.

[c4] 4.The method of claim 3 further comprising:
using the digital signals which pass through the first or second comparator to calculate a plurality of local average values each being an average of a plurality of consecutive digital signals which pass through the first or second comparator; and
comparing the local average values to determine the local maximums and local minimums of the TE signal.

[c5] 5.The method of claim 3 wherein when the optical pickup moves towards a center of the optical disc, the pseudo RFZC signal is in phase with the PD signal; the optical disc system further comprises an inverter connected to the signal generator; and when the optical pickup moves away from the center of the optical disc, the PD signal is inverted by the inverter to generate the pseudo RFZC signal.

[c6] 6. The method of claim 3 wherein the PD signal is inverted whenever the TE signal reaches a local maximum or a local minimum.

[c7] 7. The method of claim 3 further comprising:
setting an initial level of the PD signal according to a radial inward or outward moving direction of the optical pickup.

[c8] 8.The method of claim 1 wherein data is stored on grooves and lands of the optical disc.

[c9] 9.The method of claim 8 wherein the optical disc is a DVD (digital versatile disc).

[c10] 10.The method of claim 9 wherein the optical disc is a DVD-RAM (digital versatile disc random access memory).